

ABSTRACT

Non-uniform spatial offered loads are estimated for a plurality of bins corresponding to a cellular wireless territory served by Base Station Transceivers (BTS's). Using mean and standard deviation of signal strengths received at each of the bins from each of the BTS's, probabilities are computed for each bin that each of the BTS's will serve the bin. Using the computed probabilities and an estimated offered load for each BTS, which load is derived from carried load and call lost measurements at the BTS, a resource constraint is then expressed for each BTS in terms of the bin offered load estimates. Next, using an approximation of relative demand for wireless services across all bins, based, for example, on demographic data, a performance function is expressed for each bin in terms of the bin's estimated offered load. Using the performance functions, a lexicographic minimax objective function is defined, which is then coupled with the resource constraints to express an equitable resource allocation model. Finally, the optimal solution to the model is determined thereby providing the bin offered load estimates.